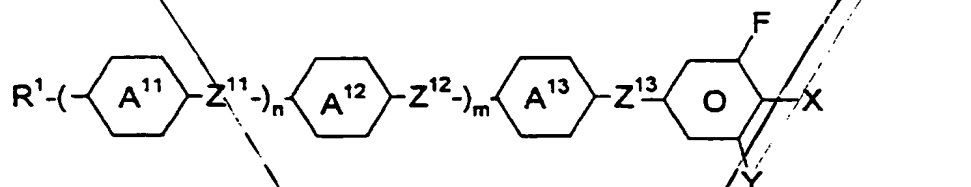


Patent claims

1. Nematic liquid-crystal medium, characterized in that it comprises

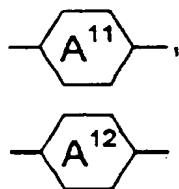
- a) one or more dielectrically positive compound(s) of the formula I



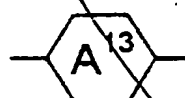
in which

$R^1$  is alkyl or alkoxy having 1 to 7 carbon atoms, alkoxyalkyl, alkenyl or alkenyloxy having 2 to 7 carbon atoms,

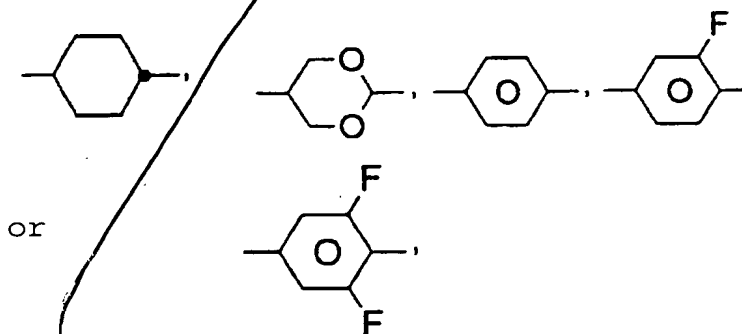
$Z^{11}$ ,  $Z^{12}$  and  $Z^{13}$  are each, independently of one another,  $-\text{CH}_2-\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{C}\equiv\text{C}-$ ,  $-\text{COO}-$  or a single bond,



and



are each, independently of one another,

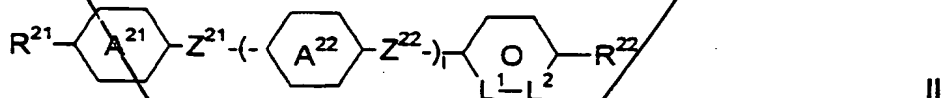


X is F,  $\text{OCF}_2\text{H}$  or  $\text{OCF}_3$ ,

where, in the case where  $X = F$  or  $OCF_2H$ ,  $Y$  is  $F$ ,  
and in the case where  $X = OCF_3$ ,  $Y$  is  $H$  or  $F$ , and

5 n and m are each, independently of one another, 0 or 1;

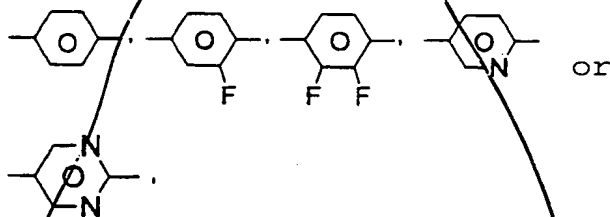
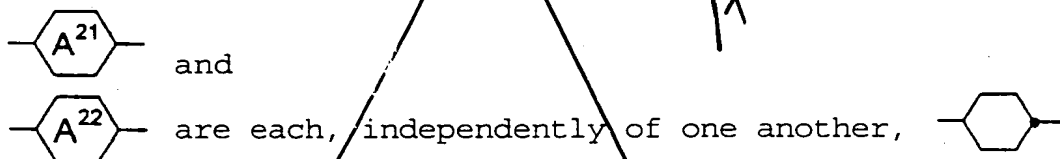
b) one or more dielectrically negative compound(s)  
of the formula II



10 in which

15  $R^{21}$  and  $R^{22}$  are each, independently of one another, as defined for  $R^1$  under the formula I,

20  $Z^{21}$  and  $Z^{22}$  are each, independently of one another, as defined for  $Z^{11}$  above under the formula I,

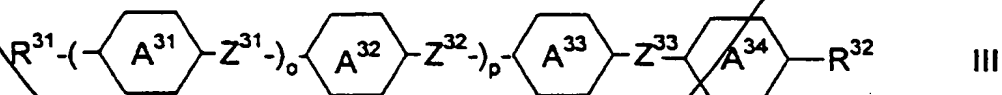


$L^1$  and  $L^2$  are both C-F or one of the two is N and the other is C-F, and

25 l is 0 or 1;

and optionally

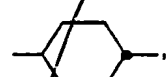
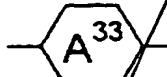
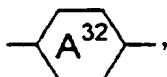
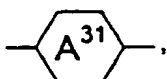
c) one or more dielectrically neutral compound(s) of the formula III



in which

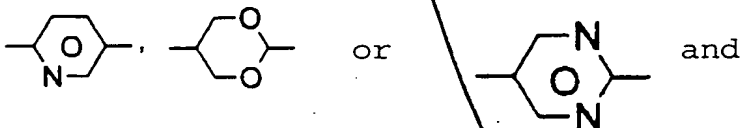
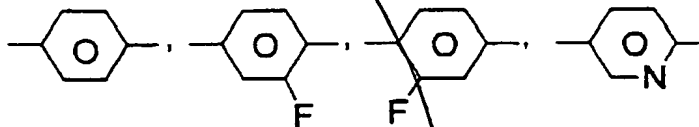
$R^{31}$  and  $R^{32}$  are each, independently of one another, as defined for  $R^1$  above under the formula I, and

$Z^{31}$ ,  $Z^{32}$  and  $Z^{33}$  are each, independently of one another,  $-CH_2CH_2-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-CF_2O-$ ,  $-OCF_2-$ ,  $-COO-$  or a single bond, and, if desired, one of  $Z^{31}$ ,  $Z^{32}$  and  $Z^{33}$  is  $-CF_2CF_2-$ ,



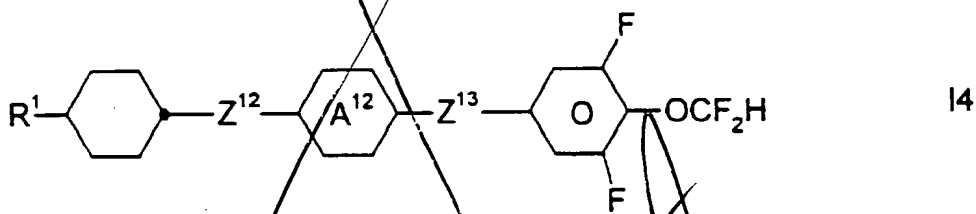
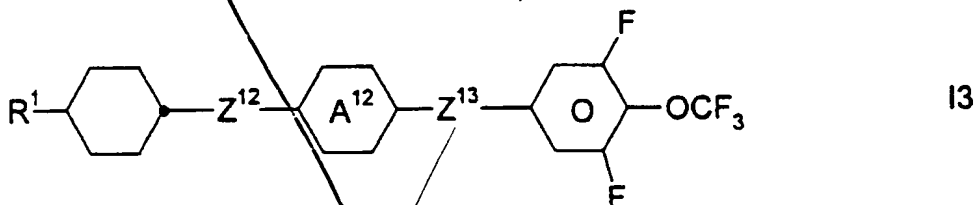
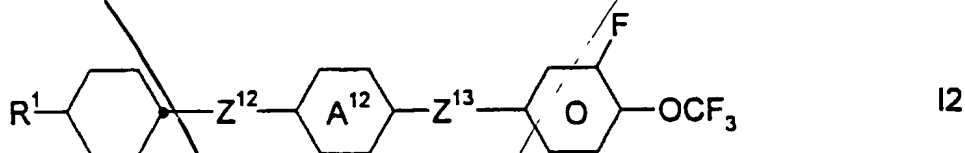
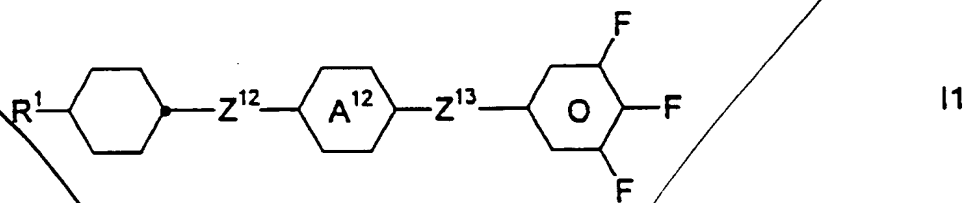
and

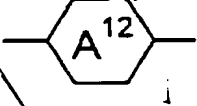
are each, independently of one another,



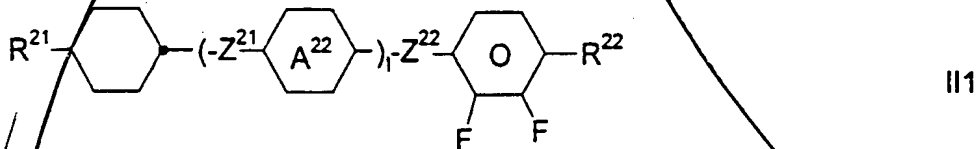
$o$  and  $p$ , independently of one another, are 0 or 1.

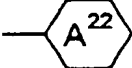
2. Liquid-crystal medium, characterized in that it comprises one or more compounds selected from the group of compounds of the formulae I1 to I4.



in which  $R^1$ ,  $Z^{12}$ ,  $Z^{13}$  and  are each as defined under the formula I in Claim 1.

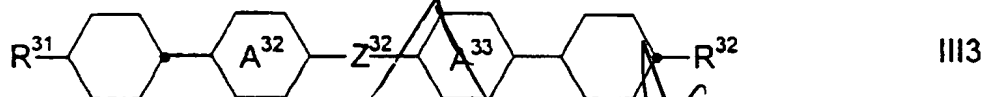
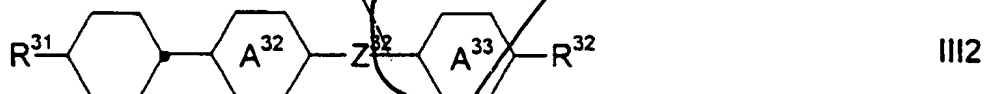
3. Liquid-crystal medium according to Claim 1 or 2, characterized in that it comprises one or more compounds of the formula III1



in which  $R^{21}$ ,  $R^{22}$ ,  $Z^{21}$ ,  $Z^{22}$ ,  and 1 are as defined in Claim 1 under the formula II.

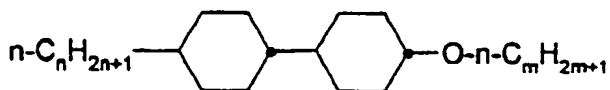
4. Liquid-crystal medium according to at least one of Claims 1 to 3, characterized in that it comprises a compound of the formula III according to Claim 1.

5. Liquid-crystal medium according to Claim 1, characterized in that it comprises one or more compounds selected from the group consisting of the compounds of the formulae III1 to III3

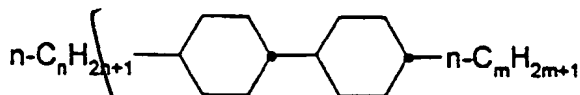


in which  $R^{31}$ ,  $R^{32}$ ,  $Z^{31}$ ,  $Z^{32}$ ,  $\text{A}^{32}$  and  $\text{A}^{33}$  are each as defined in Claim 1 under the formula III.

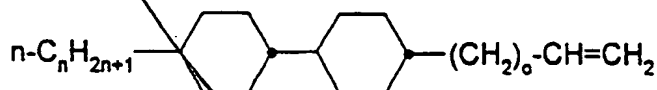
6. Liquid-crystal medium according to at least one of Claims 1 to 5, characterized in that it comprises one or more compounds selected from the group consisting of the compounds of the formulae III1a to III1d



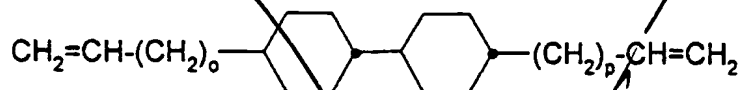
III1a



III1b



III1c



III1d

in which n and m are each, independently of one another, from 1 to 5, and o and p are each, both independently thereof and from one another, from 0 to 3.

7. Liquid-crystal medium according to at least one of Claims 1 to 6, characterized in that it comprises in total

from 50% to 70% of compounds of the formula I,  
from 5% to 30% of compounds of the formula II and  
from 10% to 40% of compounds of the formula III.

8. Use of a liquid-crystal medium according to at least one of Claims 1 to 7 in an electro-optical display.

9. Electro-optical display containing a liquid-crystal medium according to at least one of Claims 1 to 7.

10. Display element according to Claim 9, characterized in that it is an active matrix display having a matrix of three-pole active switches.

Ad 1  
B3  
B3